Installing a pillar pod and 2 gauges in a 97 Honda Civic CX

As many of us know, bare bones Hondas do not come from the factory with a tachometer, even when the vehicle is equipped with a manual transmission. There are a few options you can choose in order to have a tachometer in your Honda.

1. **Swap out the instrument cluster with one from an EX model.**
   Advantages: Looks factory, very easy to do.
   Disadvantages: Gives you one additional gauge only; is very expensive if you can't find a used one.

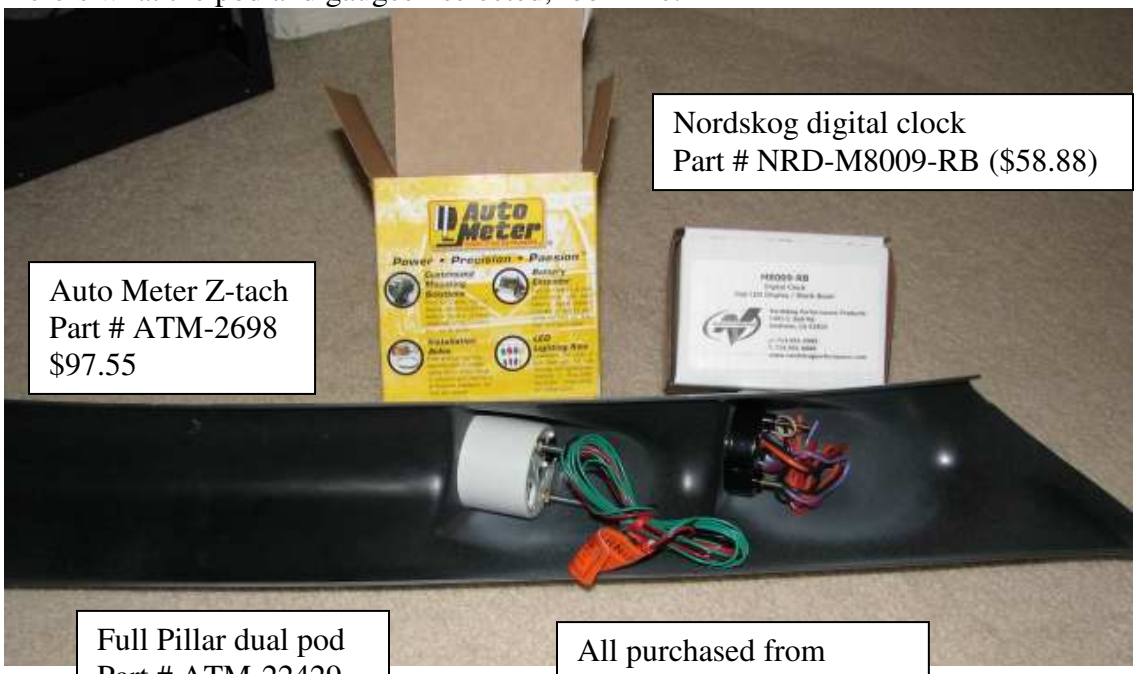
2. **Install a tachometer that bolts up to the pillar.**
   Advantages: a BIG tach is a possibility; least expensive option
   Disadvantages: Does not even remotely look factory; using a big tach invites others to try to race you; a bit more difficult to install

3. **Install a pillar pod that accommodates one, two, or even three gauges.**
   Advantages: Looks factory; more than one gauge can be added
   Disadvantages: Involves a whole bunch of wiring – more involved (timewise) than the other two options.

Since I chose option number 3, this procedure will be structured around installing a 2-gauge pod.

Step 1: Buy the necessary parts and equipment:

Here's what the pod and gauges I selected, look like:



Nordskog digital clock
Part # NRD-M8009-RB ($58.88)

Auto Meter Z-tach
Part # ATM-2698
$97.55

Full Pillar dual pod
Part # ATM-22429
$59.95

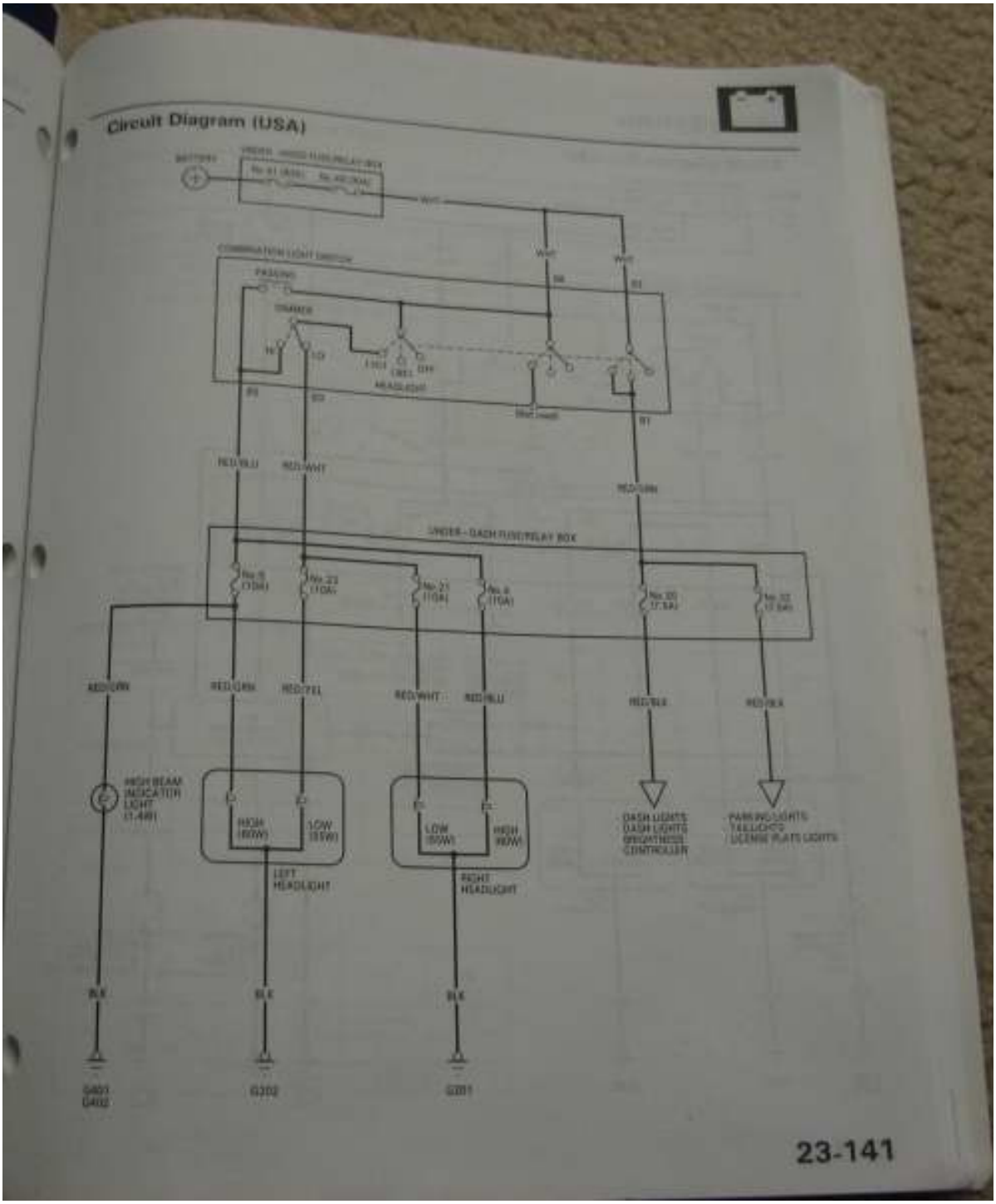
All purchased from
www.summitracing.com

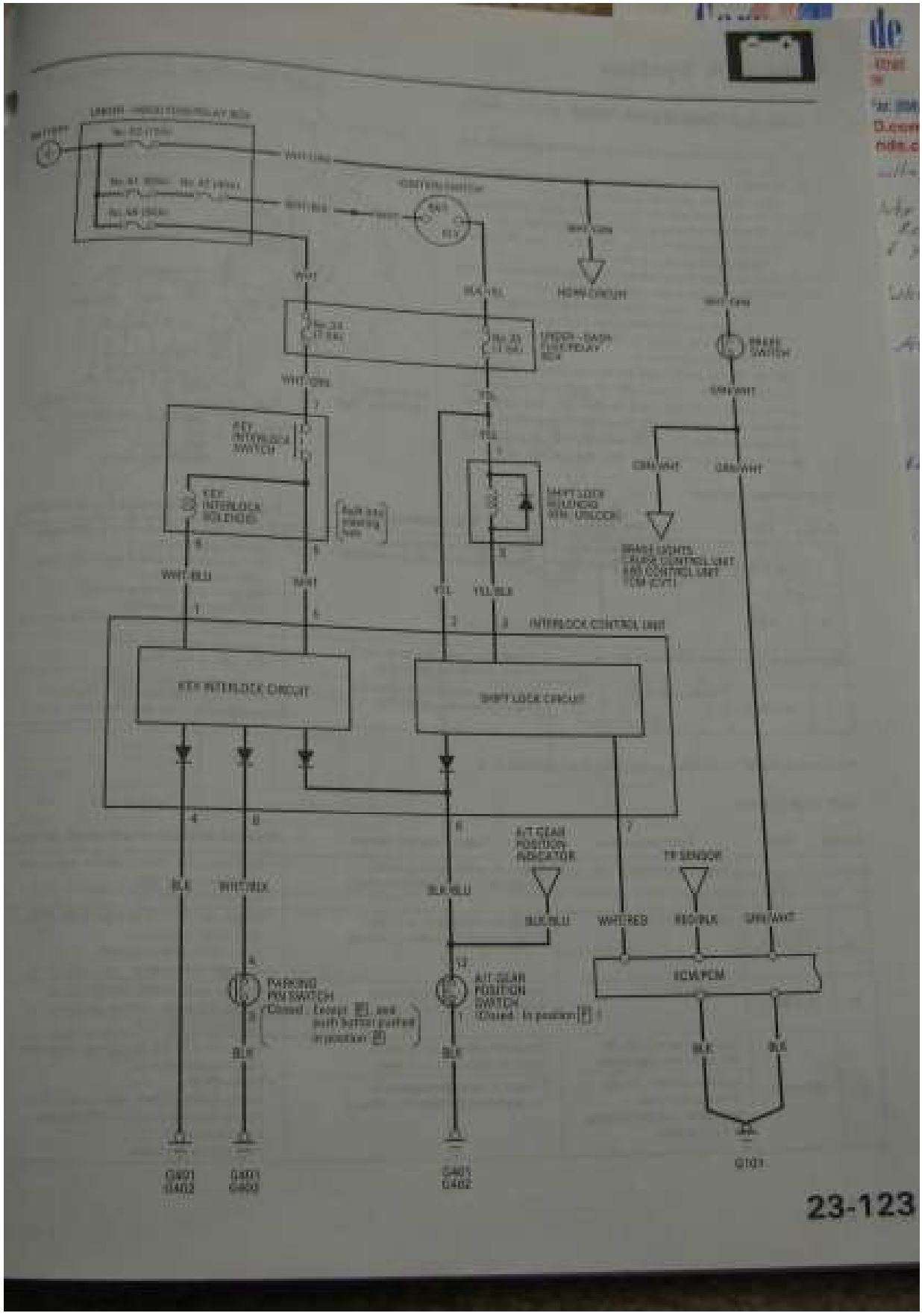
Equipment required:
Phillips (#2) screwdriver (dash lower cover)
Wire strippers
Crimp connectors
Wire crimpers
Soldering iron
Solder
22 or 24 gage multi-strand, insulated wire (red, white, and black should be okay)
Voltage tester or multimeter
Heat shrink tubing and/or electrical tape
1 amp, quick-acting fuse and fuse holder
Razor blade or Exacto knife
Service manual (if possible)
Drill and 3/16-inch drill bit

The gauges come with additional mounting hardware, but if you intend to install them in a pillar pod, you don't need the extra stuff. The gauges simply press into the openings. By the way, there are at least two sizes of openings available in pillar pods. The pod shown accepts 2 and 1/6-inch gauges and a 2 and 5/8-inch opening pillar pod is also available.

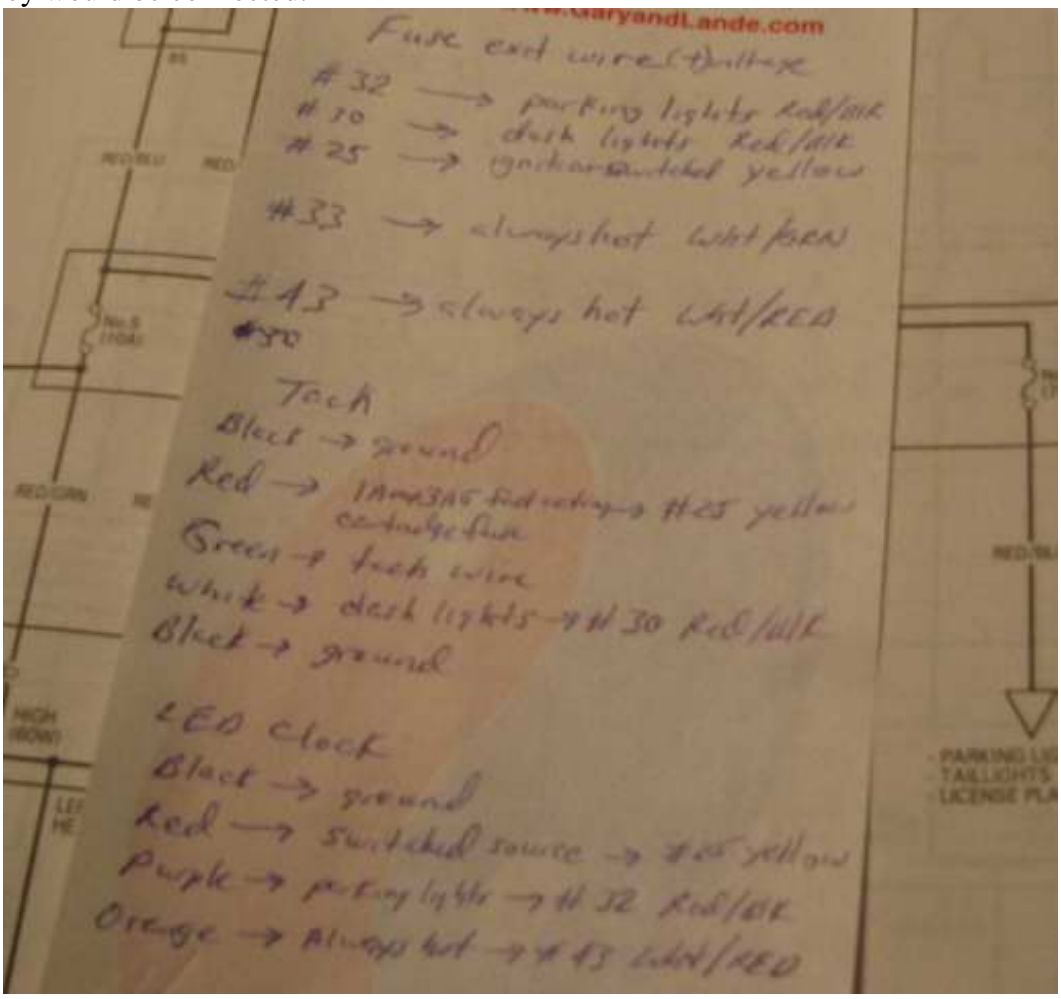
Step 2: Start mapping out the wiring:

The factory service manual offers a wealth of information and should be at the top of any DoItYourselfer's list of "aids". I bought my used manual at "The Motor Bookstore" for approximately $45. Of primary interest for this project are the wiring diagrams. Here are two of many that used to determine wire function and color:


Circuit Diagram (USA)
UNDER-DASH FUSE/RELAY BOX
RED/BLU
RED/WHT
RED/GRN
RED/YEL
RED/BLK
HIGH BEAM INDICATOR LIGHT (1.4W)
HIGH (60W)
LOW (55W)
LEFT HEADLIGHT
LOW (55W)
HIGH (60W)
RIGHT HEADLIGHT
DASH LIGHTS
DASH LIGHTS BRIGHTNESS CONTROLLER
PARKING LIGHTS
TAILLIGHTS
LICENSE PLATE LIGHTS
BLK
G401
G402
G202
G201
23-141


KEY INTERLOCK SWITCH
KEY INTERLOCK SOLENOID
SHIFT LOCK SOLENOID
INTERLOCK CONTROL UNIT
KEY INTERLOCK CIRCUIT
SHIFT LOCK CIRCUIT
A/T GEAR POSITION INDICATOR
TP SENSOR
PARKING PIN SWITCH
A/T GEAR POSITION SWITCH
ECM/PCM
G401
G402
G103
23-123

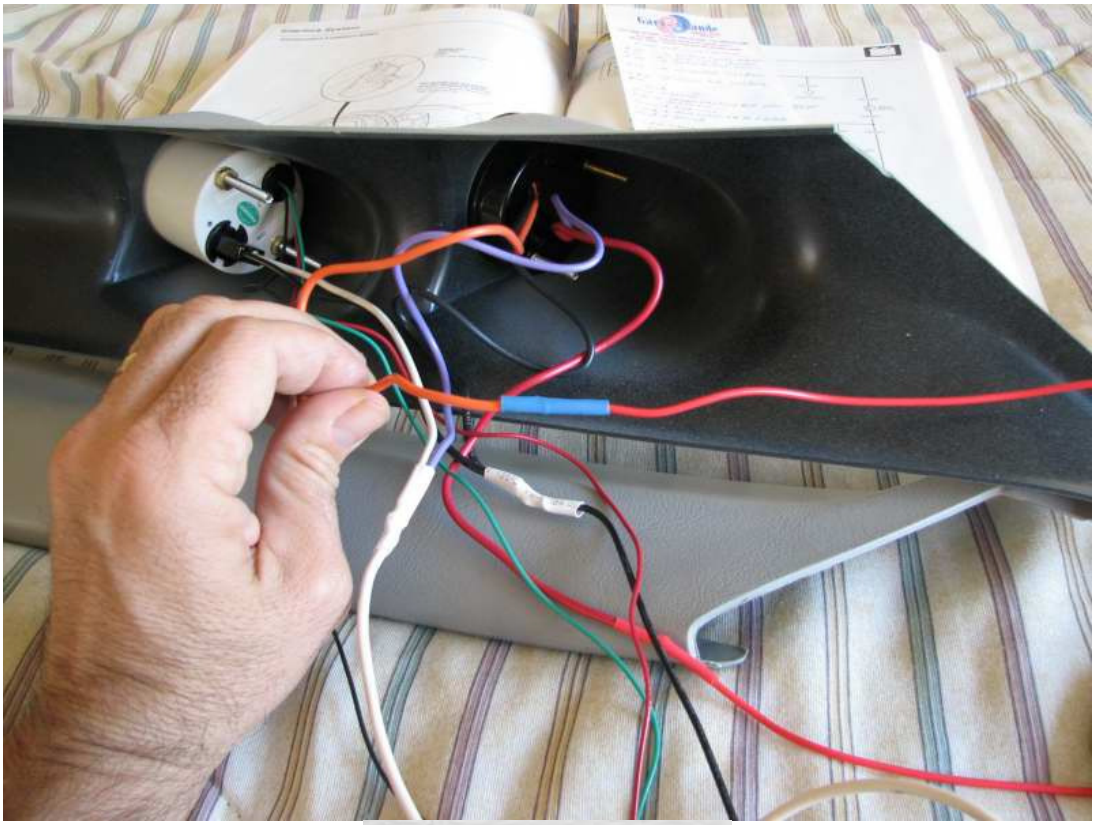
After noting the gauges' wiring requirements, I created a list of gauge wires and the wires to which they would be connected.


Fuse end wire (+) to fuse
#32 → parking lights
#10 → dash lights
#25 → ignition switched yellow
#33 → always hot
#43 → always hot
#30
Tach
Black → ground
Red → #25 yellow
Green → tach wire
White → dash lights → #30
Black → ground
LED clock
Black → ground
Red → switched source → #25 yellow
Purple → parking light → #32
Orange → always hot → #43

Note: Before you insert the tachometer into the pod, read the booklet that came with it. My tach has dip-switches (a small rectangular box with tiny flip switches in it) mounted on a small circuit board inside the case. Before I installed the tach's light bulb, I had to flip a switch or two. The ones you flip depends on how many cylinders your engine has. The tach can handle 4, 6, or 8 cylinder engines. Push each gauge into the pod and rotate it as best you can. You can always rotate them more after you install everything in your car.

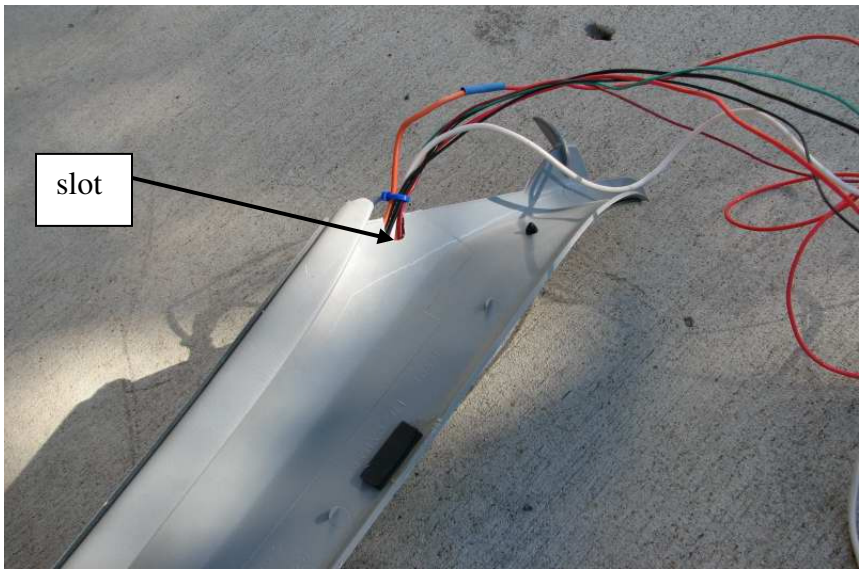
Getting back to the wires…..Since each gauge has common wire connection requirements, I connected all short ground wires together and the wires that needed to connect to the cars lighting wires. The tach white wire and the clock purple wire were soldered together. The tach needs to be lighted only when the car's interior lights are turned on, and the clock display is dimmed whenever the same lighted are switched on.

I also connected ignition-switched wires (tach and clock display) together. (Both gauges are turned on when the ignition switch is turned to the "ON" position.) Make sure you tag the ends of the wires before attaching the pillar pod to the pillar cover. This is especially important if you extend the gauge wires with different color wires.

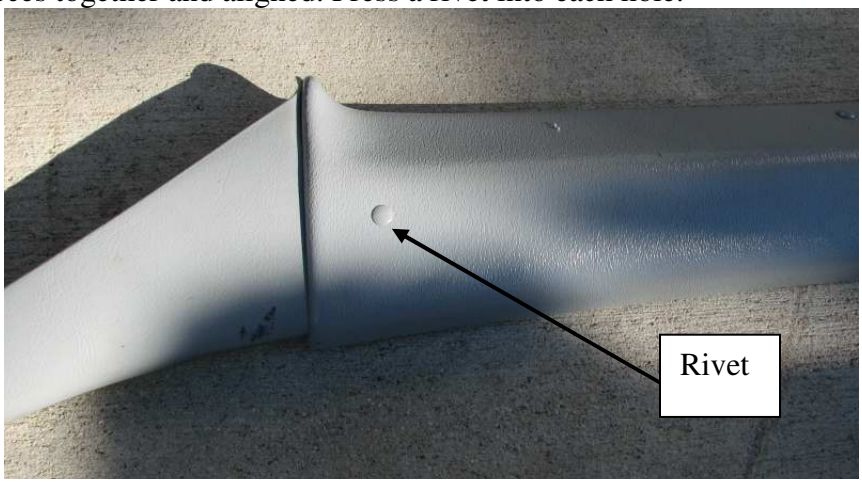


Step 3: Mounting the pillar pod:

To remove the factory pillar, which is in between the windshield and the driver-side window, pull on it (one section at a time) using both hands (one across from the other). You will feel it unlatch is some areas.
Once the pillar cover has been removed, place the pillar pod on it so that its contours line up with the pillar cover's contours. In order to make sure that the tach and clock wires do not get pinched, I used a Dremel tool to create a slot at the bottom of the factory pillar cover.



The pillar pod comes with some plastic rivets that hold the pillar pod and factory pillar cover together. Although the pillar pod instructions recommend that you use four of the rivets, I used only three. Drill a 3/16-inch hole through both the pillar pod and pillar cover, where necessary to keep the two pieces together and aligned. Press a rivet into each hole.



The fun part – Wiring your new instruments!

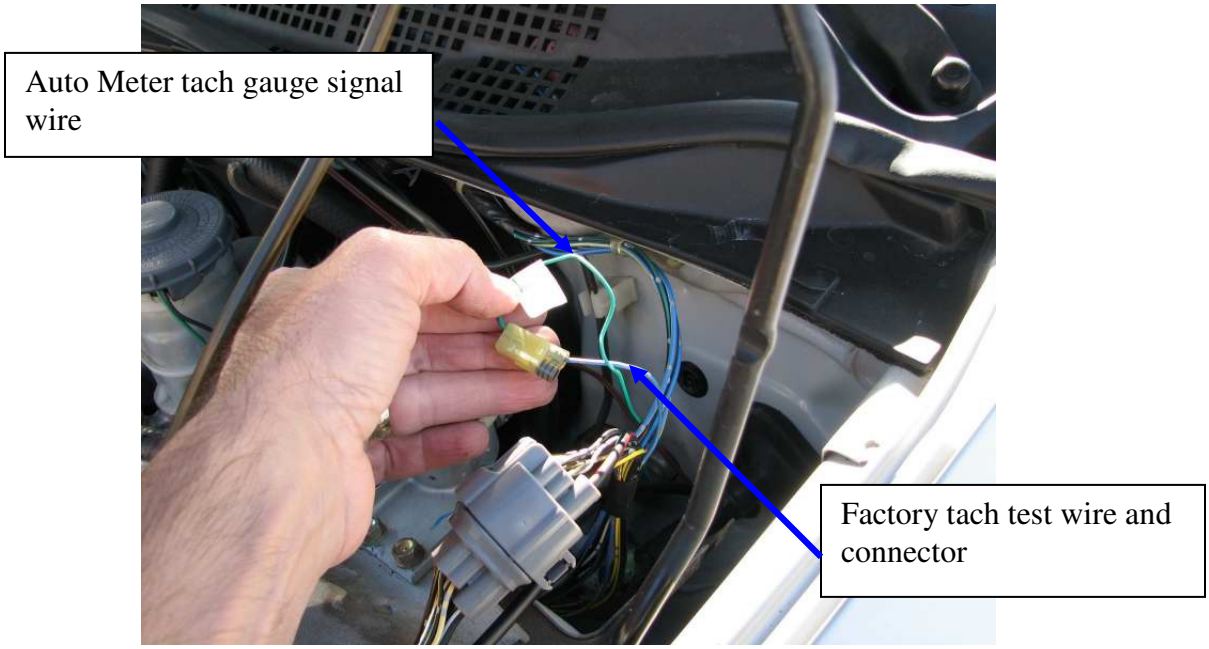
Remove the lower cover that is underneath the steering column. Use the Phillips screwdriver with #2 bit to remove the four screws and then pull on the upper far left and far right sections to unclip the panel.

Now you must feed the pillar pod assembly wires down through the opening at the corner of the windshield. I used one of those coiled wire pullers shown below.

You can always use a wire coat hanger or other long, small diameter "tool" to pull the wires down into the area near the fuse block.

The next thing I did was to connect the black ground wires. You have a couple of options, here. You can either connect them to an existing ground connection under the dash or you can run the wires out to the engine bay. Since I elected to run the tachometer wire out to the factory tach test connector, I used the same hole to feed a ground wire to the same area. Since the clock and tach ground wires were not long enough, I crimped them to each other and to a single black wire that I fed through the existing firewall hole.

The tach wire (green) was the easiest one to connect. Here's where I connected mine: As you can see in the pic below, the light-blue tach test wire has a connector at its end. The connector had a rubber boot over it and this boot was slid onto a small bracket. Ideally, you should make up a mating connector for the green tachometer wire that would plug into the test connector, but since I didn't have one, I simply jammed the wire end into the connector. This is really a temporary connection and I will probably solder the wire to the factory test wire, somewhere before the connector.



At this point, it was necessary to verify just what would be a good ground connection. Before this project was started, I had intended to use a digital multimeter to verify ground and voltage connections. However, while looking around in a Walmart, I found a much simpler tool that is easier to use. The cost? ….about $4.00 or so.

This is truly the most valuable tool I used for the wiring part of things. This voltage tester has two different colored LEDs in its handle, one red and one green. To find a good ground, simply attach its alligator clip to a positive voltage source (I attached it to the positive battery terminal) and start touching prospective ground sources with the tool's pointy tip. The green LED will light up when you find a good ground. I used a mounting bolt for a bracket that is positioned near the tach wire test connector. Just unscrew the bolt a bit, and wrap the stripped end of your ground wire underneath the bolt head. Tighten the bolt and your ground worries are over.

Note: One of the reasons I connected my ground wire to an unused ground is that it provides redundancy of connection. In other words, if one ground connection loosens or otherwise loses contact to vehicle ground, you won't have many instruments failing at the same time. The same philosophy applies to power connections – more connections are generally better.

Now that you have your tach signal wire and ground connections all set up, it's time to connect everything else. My Auto Meter tach instructions suggested that a 1-amp fuse be installed in-line

with its red wire, so that's what I did next. These fuses and fuse holders can be purchased almost anywhere and are relatively inexpensive.

After looking at the way the alarm wires are hooked up, I came to realize that the fastest way to tap into factory power wires is to use a clamp connector. You crimp your wire to this thing and simply clamp the other end onto the factory wire – simple and fast. If you can get ahold of some of these – DO IT! Soldering can be a very slow process!

Unfortunately, I didn't have any of these and to be honest, have never seen one before this project. Fortunately, there are three other options:

1. Cut factory wires and wire nut its two ends along with the gauge wire
2. Cut factory wires and solder or crimp all three wires together
3. Slice open the factory wire insulator and solder the gauge wire to it.

I chose number 3 because if my connection ever comes loose, the factory connection and its recipient lights or other component will remain powered.

Although I knew what color wires I should be looking for (from the service manual), I used the super-valuable voltage/ground testing tool to be sure. Basically, there were three types of power that I needed to tap into:

1. Constant-on power for the clock
2. Ignition-switched power for the tach and clock display
3. Power that was energized only when the lights were turned on. This is required to turn on the tach light and to dim the clock display.

Luckily, there is a large wire connector that plugs into the fuse box. After clipping the voltage tester alligator clip to a curved metal piece that is situated above the fuse box, I placed the tester's pointer into the end of each wire that was plugged into the large connector. Each wire has a pin, the end of which you can touch with the tester tip. I quickly found that a large white wire was always hot (energized), but left its connection to my clock wire for last. When the tester tip touches a hot (12 volt) wire, its red LED lights up.

Next, I turned the ignition to "ON" and touched each of the connector pin ends until the tester's red LED lit up. This wire is yellow. The remaining wire had to be energized when the car lights were switched on. After turning on the lights, I found the energized wire to be red/black (red with a black stripe), just as my service manual had indicated. **Note:** The beauty of using the voltage tester for finding live wires is that its tip can pierce a wire's jacket; this eliminates the need to find the end of the wire if it is not within eyesight or reach.

Now here's where the razor blade or Exacto knife comes in handy: By pulling the desired wire away from the bundle of wires that is routed to the fuse block connector, I was able to slice some of the wire's insulation and pull the copper wire out (from its insulating jacket far enough to apply solder to it. A dental pick with a curved tip would be ideal for this task.

I then applied solder to the gauge wire or, if two gauge wires were to be connected, I either soldered the gauge wires to a third wire first, or crimped them to the third wire. The other end of the third wire was soldered to the factory wire.

Once a soldered connection was made to the factory wire, I wrapped electrical tape around it.

Note: You can connect the always-hot wire to the clock wire without disconnecting the battery cables, but **you MUST be careful not to touch a grounded object with any tools that are touching the hot wire at the same time. If this happens, a fuse will blow and you will have to replace it.**

If soldering two wire ends together, use heat shrink tubing by sliding it over the connection and heating the tubing with a heat gun or by moving the solder iron tip over it.

Before you reassemble the instrument panel lower cover, check the function of every gauge wire. Start the car, turn on the lights, and set the clock if applicable.

Here's what my setup looks like:

I hope to add some night shots, soon. If anyone has any questions about this setup, feel free to email me at dsulli@conceptualpolymer.com

Dave